

FIG. 2

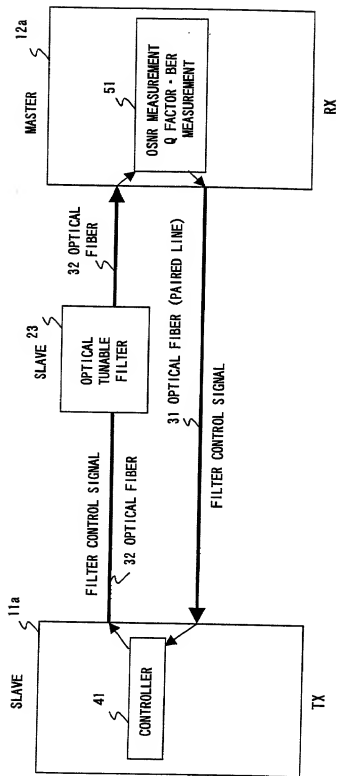


FIG. 3

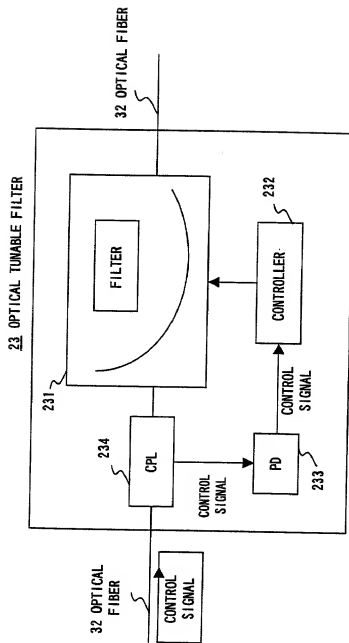


FIG. 4

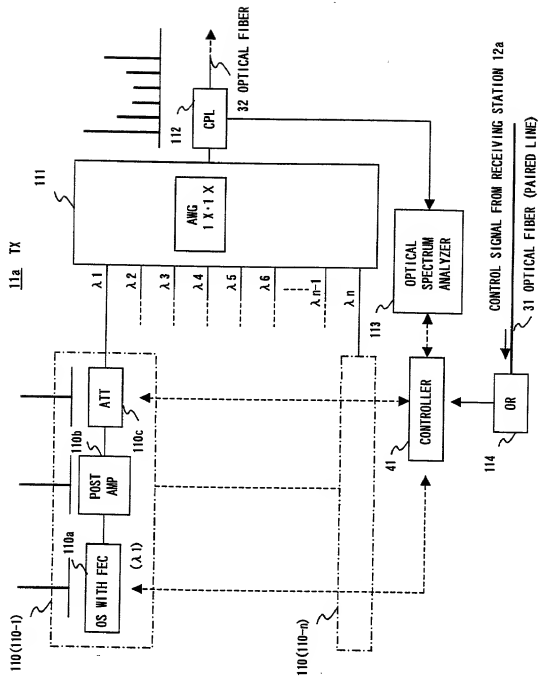


FIG. 5

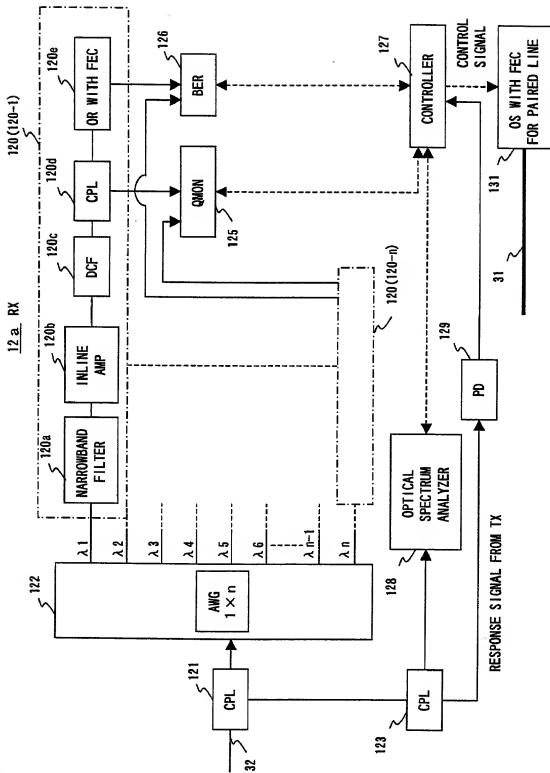


FIG. 6

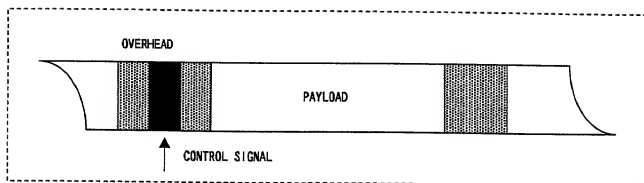


FIG. 7A

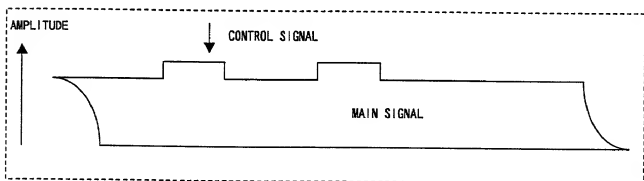


FIG. 7B

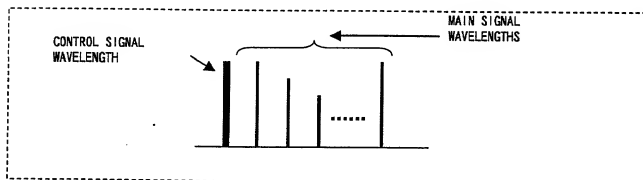
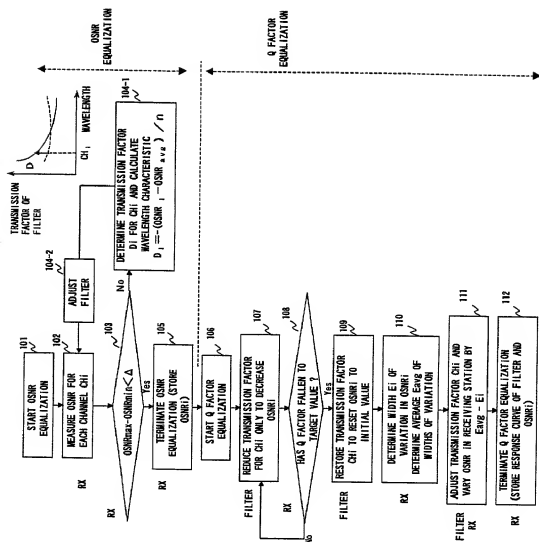


FIG. 7C



F I G. 8



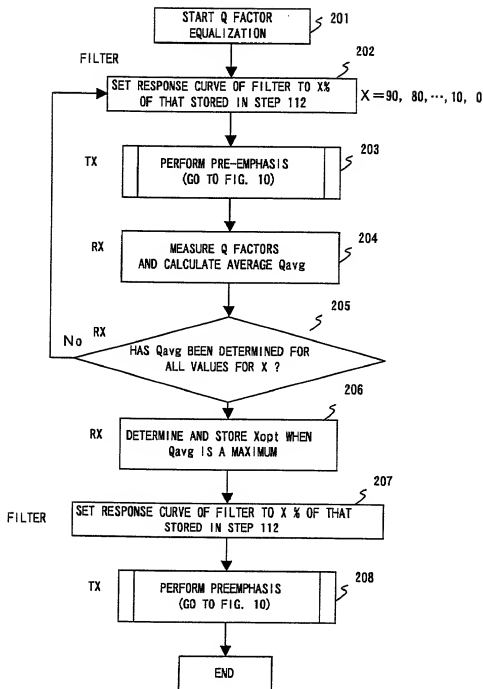


FIG. 9

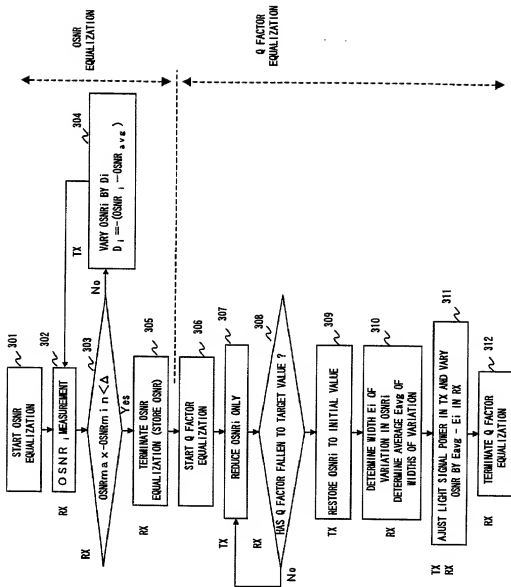


FIG. 10

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graph TD
    401[START Q FACTOR EQUALIZATION] --> 402[REDUCE OSNRi FOR Chi ONLY THROUGH PRE-EMPHASIS CONTROL]
    402 --> 403{HAS Q FACTOR FALLEN TO TARGET VALUE ?}
    403 -- No --> 402
    403 --> 404[RESTORE OPTICAL SIGNAL POWER TO RESTORE OSNRi TO INITIAL VALUE]
    404 --> 405[DETERMINE WIDTH OF VARIATION Ei IN OSNRi AND AVERAGE Eavg]
    405 --> 406[ADJUST TRANSMISSION FACTOR FOR Chi TO VARY OSNR IN RX BY  $(E_{avg} - E_i) * X_{opt}$ ]
    406 --> 407[OPTICAL SIGNAL POWER FOR Chi TO VARY OSNR IN RX BY  $(E_{avg} - E_i) * (1 - X_{opt})$ ]
    407 --> 408[TERMINATE Q FACTOR EQUALIZATION]

```

FIG. 11

Diagram illustrating the effect of noise on the width of variation in OSNR. Two vertical bars represent signal spectra for CH 1 and CH 2. CH 1 has a wider base (noise) and a larger "WIDTH OF VARIATION IN OSNR" ( $E_1$ ). CH 2 has a narrower base (noise) and a smaller "WIDTH OF VARIATION IN OSNR" ( $E_2$ ). A horizontal line indicates "OSNR WHEN Q FACTOR = TARGET VALUE  $B_1$ ". A double-headed arrow labeled  $B_2$  shows the difference in OSNR between the two channels at this level. A dashed line indicates a higher OSNR level. Arrows labeled "NOISE" point to the shaded bases of the spectra.

FIG. 12

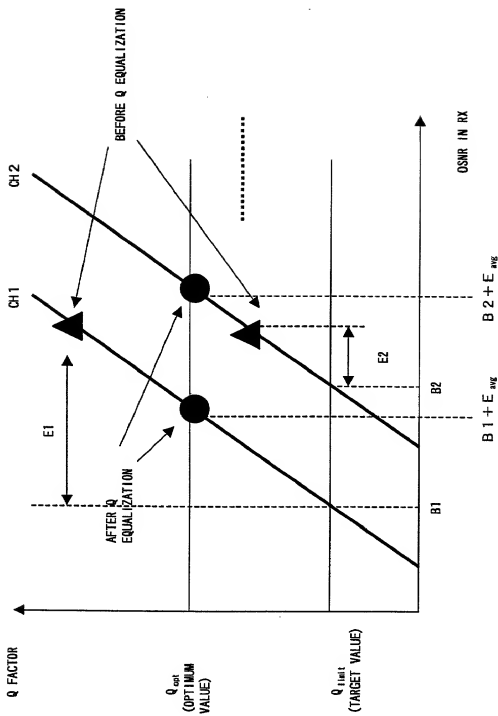


FIG. 13

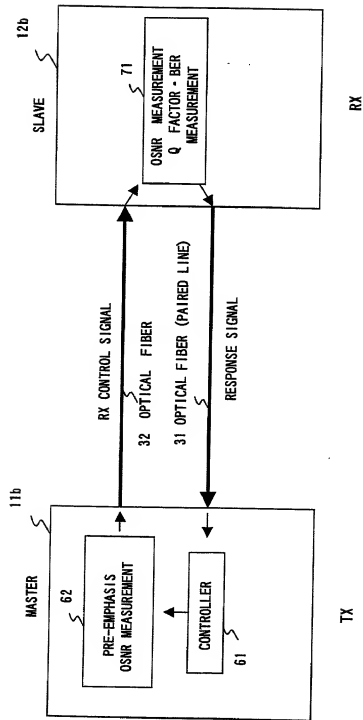


FIG. 14

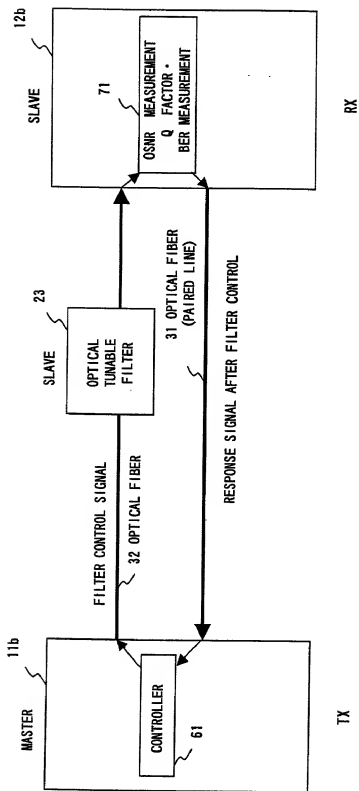


FIG. 15

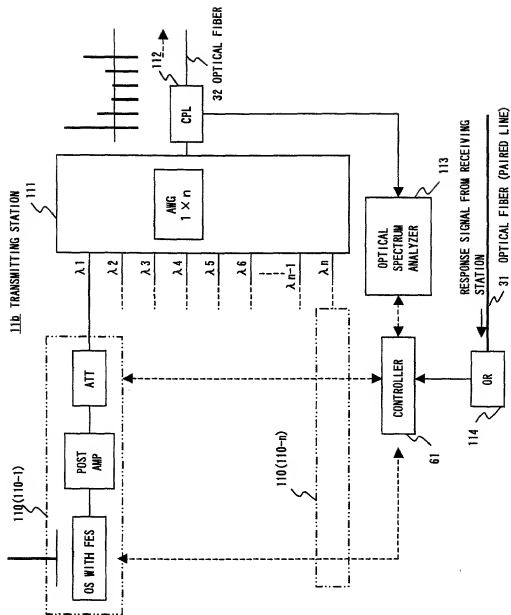


FIG. 16



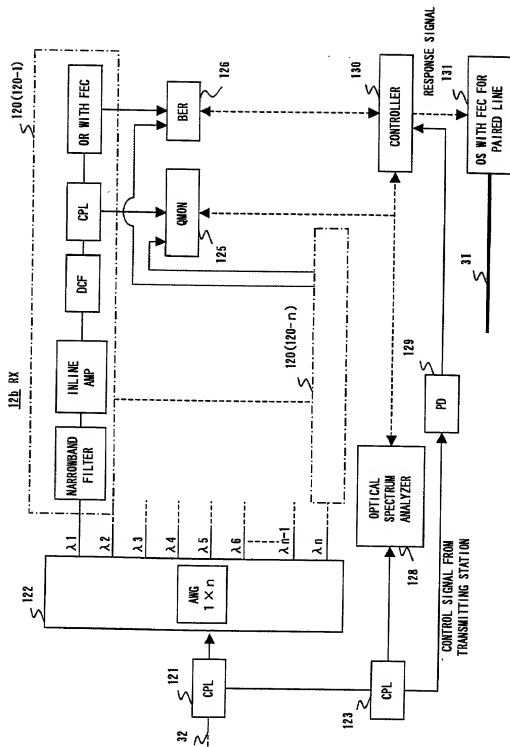


FIG. 17

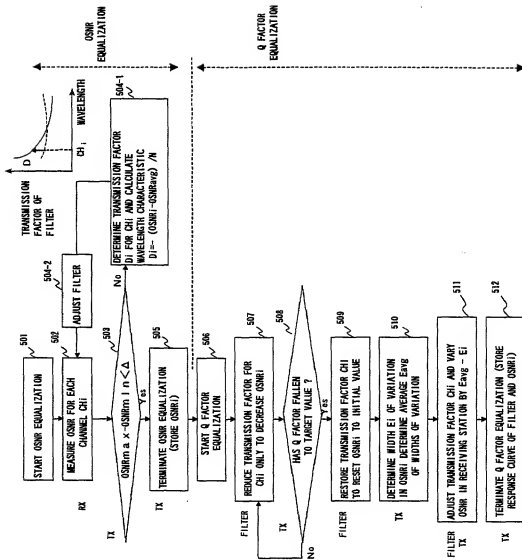


FIG. 18

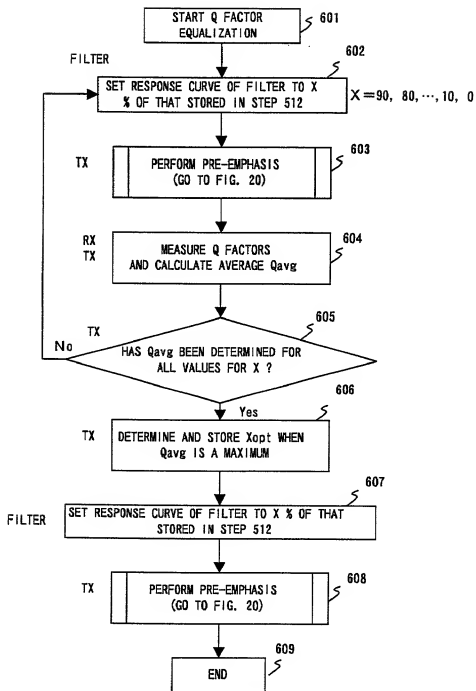


FIG. 19

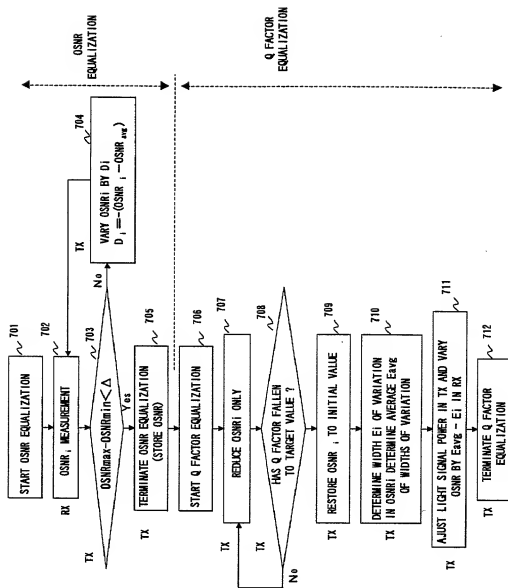


FIG. 20

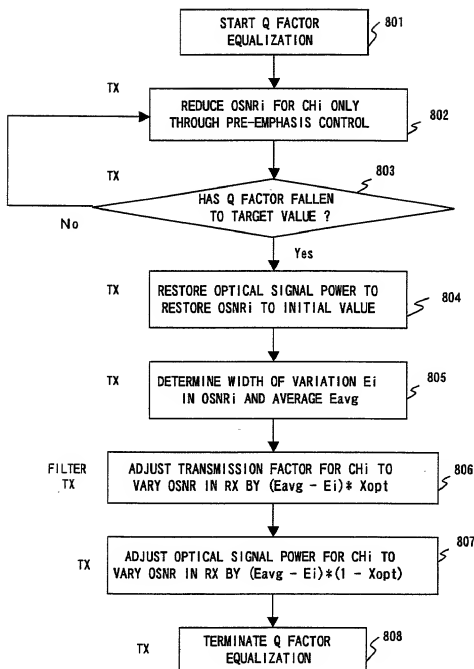


FIG. 21

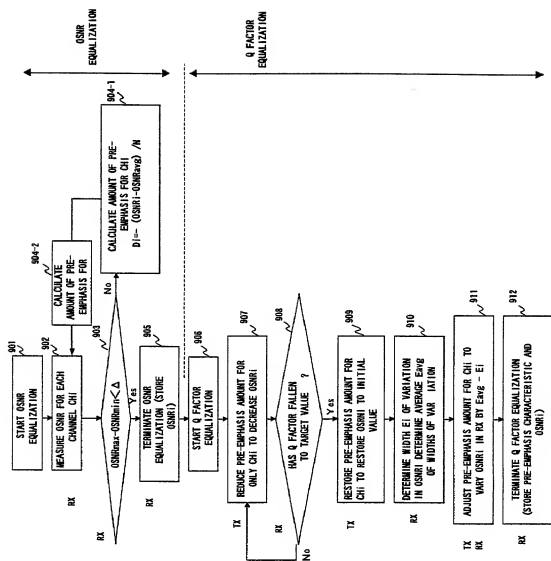


FIG. 22

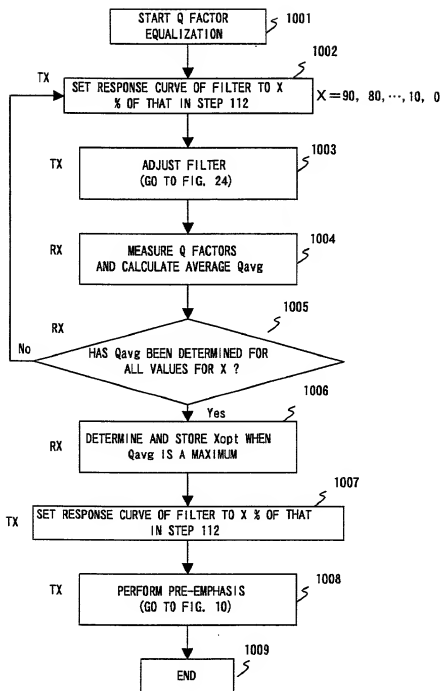
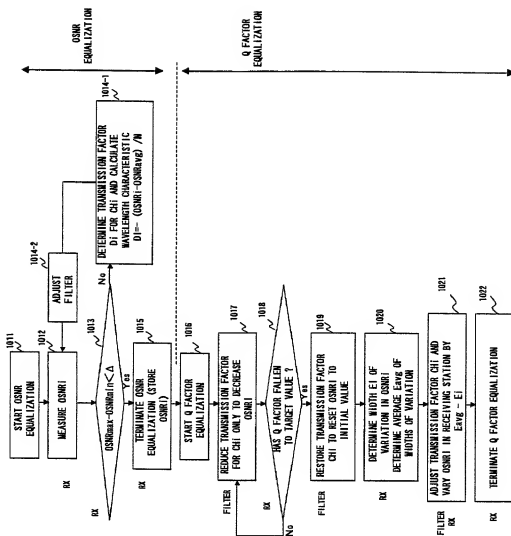


FIG. 23





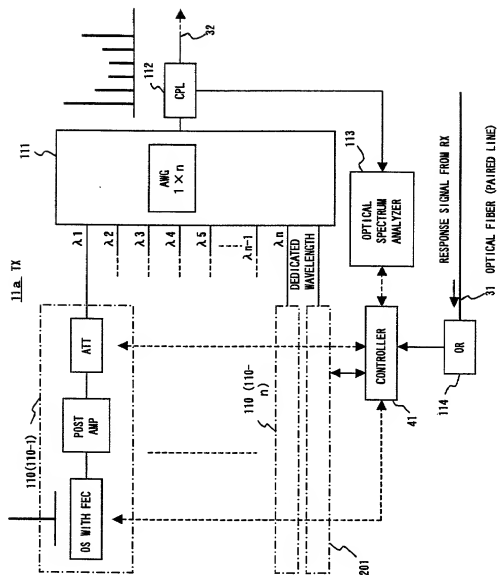


FIG. 25

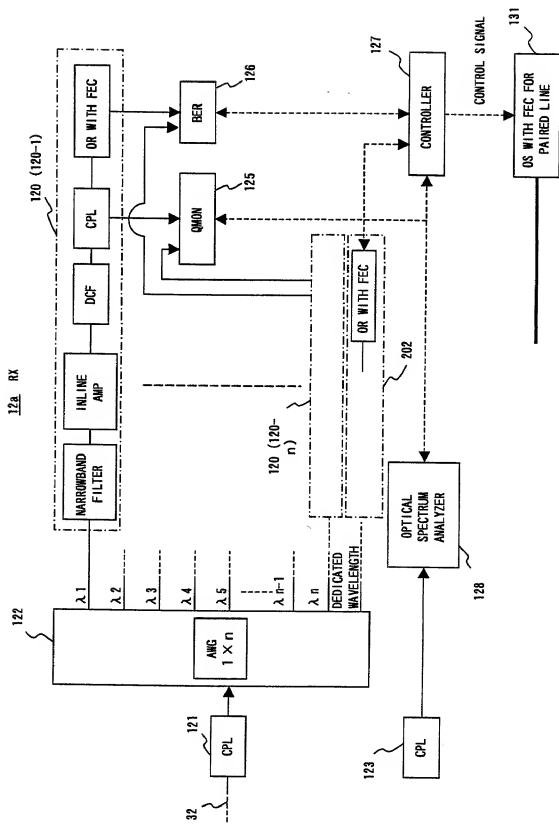


FIG. 26